

Form 101-100 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. MI22-1599	SERIAL NO. 09/820,468
LIST OF ART CITED BY APPLICANT (Use several sheets if necessary)		APPLICANT Werner Juengling et al.	
		FILING DATE March 28, 2001	GROUP 2812

OIPE
 OCT 02 2002
 JCS
 PATENT AND TRADEMARK OFFICE

U.S. PATENT DOCUMENTS							
*Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
	AA	5,494,858	02-1996	Gnade et al.			
	AB	5,723,368	03-1998	Cho et al.			
	AC	5,380,679	01-1995	Kano			
	AD	5,967,804	10-1999	Yoshizawa et al.			
	AE	5,981,085	11-1999	Ninomiya et al.			
	AF	6,347,446 B1	02-2002	Luthra et al.			
	AG	5,298,311	03-1994	Bentson et al.			
	AH	6,245,439 B1	06-2001	Yamada et al.			
	AI						
	AJ						
	AK						
	AL						

FOREIGN PATENT DOCUMENTS							
Document Number	Date	Country	Class	Subclass	Translation		
					Yes	No	
AM							
AN							
AO							
AP							
AQ							


OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)			
AR			
AS			
AT			

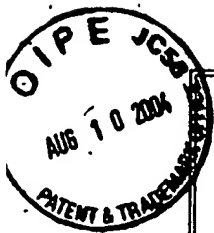
EXAMINER	DATE CONSIDERED
----------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

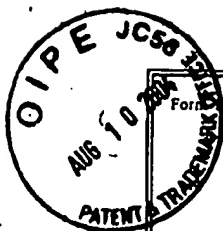
 RECEIVED
 OCT - 8 - 2002
 TECHNOLOGY CENTER 2800

Duplicate

		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. M122-1599		SERIAL NO. 09/820,468	
		LIST OF ART CITED BY APPLICANT (Use several sheets if necessary)		APPLICANT Werner Jungling et al.			
				FILING DATE March 28, 2001		GROUP 2812	
U.S. PATENT DOCUMENTS							
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	AA	4,843,034	7/27/1989	Hemdon et al.			
	AB	5,750,415	5/12/1998	Gnade et al.			
	AC	5,858,871	1/12/1999	Jeng			
	AD	6,319,852 B1	11/20/2001	Smith et al.			
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation
							Yes No
	AL						
	AM						
	AN						
	AO						
	AP						
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)							
	AR						
	AS						
	AT						
EXAMINER				DATE CONSIDERED			
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>							



Form PTO-1449		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. M122-1599		PRIORITY SERIAL NO. 09/115,339	
LIST OF ART CITED BY APPLICANT (Use several sheets if necessary)				APPLICANT Werner Juengling et al.		PRIORITY FILING DATE July 14, 1998	
				PRIORITY GROUP 2813			
U.S. PATENT DOCUMENTS							
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
PH	AA	3,919,060	11/11/75	Pogge et al.			
	AB	3,979,230	9/7/76	Anthony et al.			
	AC	3,998,662	12/21/76	Anthony et al.			
	AD	4,063,901	12/20/77	Shiba			
	AE	4,180,416	12/25/79	Brock			
	AF	5,488,015	1/30/96H	Evemann et al.			
	AG	5,496,773	3/5/96	Rhodes et al.			
	AH	5,525,857	6/11/96G	Snade et al.			
	AI	5,527,737	6/18/96J	eng			
	AJ	5,583,078	12/10/96	Osenbach			
PH	AK	5,599,745	2/4/97	Reinberg			
FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation Yes No
	AL						
	AM						
	AN						
	AO						
	AP						
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)							
PH	AR		HOMMA, TETSUYA, "Low Dielectric Constant Materials and Methods for Interlayer Dielectric Films in Ultralarge-Scale Integrated Circuit				
			Multilevel Interconnections", <u>Materials Science & Engineering</u> , R23, pp. 243-285 (1998)				
PH	AS		ABSTRACT: Townsend, P.H., et al., "SILK Polymer Coating With Low Dielectric Constant and High Thermal Stability for ULSI Interlayer				
			Dielectric", <u>The Dow Chemical Company</u> , Midland, MI, 9 Pages, (Undated)				
	AT		PRODUCT BROCHURE and MATERIAL SAFETY DATA SHEET, "Interlayer Dielectric", <u>JSR Microelectronics</u> , 12 Pages (1997)				
EXAMINER <i>[Signature]</i>				DATE CONSIDERED 10/8/04			
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							



Form TO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
M122-1599PRIORITY SERIAL NO.
09/115,339LIST OF ART CITED BY APPLICANT
(Use several sheets if necessary)APPLICANT
Werner Juengling et al.PRIORITY FILING DATE
July 14, 1998PRIORITY GROUP
2813

U.S. PATENT DOCUMENTS

*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
<i>MSL</i>	AA	5,629,238	5/13/97C	Boh et al.			
	AB	5,670,828	9/23/97C	Heung et al.			
	AC	5,691,565	11/25/97	Manning			
	AD	5,691,573	11/25/97	Avanzino et al.			
	AE	5,773,363	6/30/98D	Gerdtan et al.			
	AF	3,954,523	05/76	Magdo et al.	148	175	
	AG	5,023,200	06/91	Blewer et al.	437	187	
	AH	5,470,801	11/95	Kapoor et al.	437	238	
	AJ	5,192,834	03/1993	Yamanishi et al.			
	AJ	5,461,003	10/1993	Havemann et al.			
<i>MSL</i>	AK	5,744,399	04/1998	Rostoker et al.			

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							

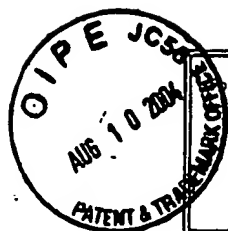
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)

<i>MSL</i>	AR		Togo, M., "A Gate-side Air-gap Structure (GAS) to Reduce the Parasitic Capacitance in MOSFETs", 1996 Sympos. on VLSI Technology Digest of Technical Papers, IEEE 1996, pp. 38-39.
<i>MSL</i>	AS		Anand, M.B., "NURA: A Feasible, Gas-Dielectric Interconnect Process", 1996 Sympos. on VLSI Technology Digest of Technical Papers, IEEE 1996, pp. 82-83.
<i>MSL</i>	AT		Watanabe, H., "A Novel Stacked Capacitor with Porous-Si Electrodes for High Density DRAMs", Microelectronics Research Laboratories, NEC Corp., date unknown, pp. 17-18.

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
M122-1599PRIORITY SERIAL NO.
09/115,339LIST OF ART CITED BY APPLICANT
(Use several sheets if necessary)APPLICANT
Werner Juengling et al.PRIORITY FILING DATE
July 14, 1998PRIORITY GROUP
2813

U.S. PATENT DOCUMENTS

*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
<i>ML</i>	AA	5,171,713	12/1992	Mathews			
	AB	4,561,173	12/1985	TeVelde			
	AC	5,141,896	08/1992	Katoh			
	AD	5,736,425	04/1998	Smith et al.			
	AE	5,807,607	09/1998	Smith et al.	2		
	AF	5,950,102	09/1999	Lee			
	AG	5,882,978	03/1999	Srinivasan et al.			
	AH	5,804,508	09/1998	Goode et al.			
	AI	5,103,288	04/1992	Sakamoto et al.			
	AJ	6,028,015	02/00	Wang et al.			
	AK	5,883,014	03/1999	Chen et al.			
	AL	5,861,345	01/1999	Chou et al.			
	AM	6,001,747	12/1999	Annappagada			
<i>ML</i>	AN	S/N 09/948,372		Leonard Forbes et al.			10/9/97

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	AO							
	AP							

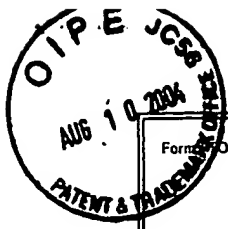
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

<i>ML</i>	AQ	Peter Singer (Editor-in-Chief): "The New Low-k Candidate: It's a Gas"; Technology News, March 1989, 1 page
<i>ML</i>	AR	ABSTRACT: Anderson, R.C. et al., "Porous Polycrystalline Silicon: A New Material For MEMS", Jnl. Of Microelectromechanical Systems (Mar. 1994), Vol. 3, No. 1, pp. 10-18
<i>ML</i>	AS	Stanley Wolf, "Silicon Processing for the VLSI Era", Vol. 1, Sunset Beach, CA; Lattice Press, pp. 429-437.

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form PTO-1449		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. M122-1599		SERIAL NO. 09/820,468		
LIST OF ART CITED BY APPLICANT (Use several sheets if necessary)				APPLICANT Micron Technology, Inc.				
				FILING DATE March 28, 2001		GROUP 2812		
U.S. PATENT DOCUMENTS								
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
<i>MA</i>	AA	5,970,360	10-19-99	Cheng et al.				
	AB							
	AC							
	AD							
	AE							
	AF							
	AG							
	AH							
	AI							
	AJ							
	AK							
FOREIGN PATENT DOCUMENTS								
		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)								
	AR							
	AS							
	AT							
EXAMINER <i>M. A. Roberts</i>				DATE CONSIDERED <i>07/8/01</i>				
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.								

Form PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
MI22-1599SERIAL NO.
09/820,468LIST OF ART CITED BY APPLICANT
(Use several sheets if necessary)APPLICANT
Werner Juengling et al.FILING DATE
March 28, 2001GROUP
2824

AUG 10 2004

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
AA						
AB						
AC						
AD						
AE						
AF						
AG						
AH						
AI						
AJ						
AK						
AL						

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Subclass	Translation	
						Yes	No
AM							
AN							
AO							
AP							
AQ							

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)

MSL	AR	Stanley Wolf, "Silicon Processing for the VLSI Era", 1986, pp 1-8.
	AS	
	AT	

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

018

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
M122-1599SERIAL NO.
09/820,468LIST OF ART CITED BY APPLICANT
(Use several sheets if necessary)APPLICANT
Werner Juengling et al.FILING DATE
March 28, 2001GROUP
2824

APR 29 2004

U.S. PATENT DOCUMENTS

*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
BSL	AA	6,156,374	12-2000	Forbes et al.			
BSL	AB	5,286,668	02-1994	Chou			
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	AM							
	AN							
	AO							
	AP							
	AQ							

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)

	AR	Seeley, Wolf, "Silicon Processing for the VLSI Era", 1986, pp 1-8.	ALREADY CONSIDERED
	AS		
	AT		

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-159 <div style="text-align: center;"> OTPE APR 29 2004 </div>		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. M122-1599		PRIORITY SERIAL NO. 09/115,339	
LIST OF ART CITED BY APPLICANT (Use several sheets if necessary)				APPLICANT Werner Juengling et al.			
PRIORITY FILING DATE July 14, 1998				PRIORITY GROUP 2813			
U.S. PATENT DOCUMENTS							
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	AA	3,919,060	11/11/75	Pogge et al.			
	AB	3,979,230	9/7/76	Anthony et al.			
	AC	3,998,662	12/21/76	Anthony et al.			
	AD	4,063,901	12/20/77	Shiba			
	AE	4,180,416	12/25/79	Brock			
	AF	5,488,015	1/30/96H	Leumann et al.			
	AG	5,496,773	3/5/96	Rhodes et al.			
	AH	5,525,857	6/11/96G	Wade et al.			
	AJ	5,527,737	6/18/96J	Eng			
	AJ	5,583,078	12/10/96	Osenbach			
	AK	5,599,745	2/4/97	Reinberg			
FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation
							Yes No
	AL						
	AM						
	AN						
	AO						
	AP						
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)							
	AR		HOMMA, TETSUYA, "Low Dielectric Constant Materials and Methods for Interlayer Dielectric Films in Ultralarge-Scale Integrated Circuit				
			Multilevel Interconnections", <u>Materials Science & Engineering</u> , R23, pp. 243-285 (1998)				
	AS		ABSTRACT: Townsend, P.H., et al., "Silk Polymer Coating With Low Dielectric Constant and High Thermal Stability for ULSI Interlayer				
			Dielectric", <u>The Dow Chemical Company</u> , Midland, MI, 9 Pages, (Undated)				
	AT		PRODUCT BROCHURE and MATERIAL SAFETY DATA SHEET, "Interlayer Dielectric", <u>JSR Microelectronics</u> , 12 Pages (1997)				
EXAMINER				DATE CONSIDERED			
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

COPY

EL979979095

Form PT-1019P		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE			ATTY. DOCKET NO. M122-1599		PRIORITY SERIAL NO. 09/115339	
LIST OF ART CITED BY APPLICANT (Use several sheets if necessary)					APPLICANT Werner Juengling et al.			
					PRIORITY FILING DATE July 14, 1998		PRIORITY GROUP 2813	
U.S. PATENT DOCUMENTS								
*Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate		
	AA	5,171,713	Mathews					
	AB	4,561,173	TeVelde					
	AC	5,141,896	Katoh					
	AD	5,736,425	Smith et al.					
	AE	5,807,607	Smith et al.					
	AF	5,950,102	Lee					
	AG	5,882,978	Srinivasan et al.					
	AH	5,804,508	Gnade et al.					
	AI	5,103,388	Sakamoto et al.					
	AJ	6,028,015	Wang et al.					
	AK	5,883,014	Chen et al.					
	AL	5,861,345	Chou et al.					
	AM	6,001,747	Annappagada					
	AN	S/N 09/948,372	Leonard Forbes et al.					10/9/97
FOREIGN PATENT DOCUMENTS								
	Document Number	Date	Country	Class	Subclass	Translation		
						Yes	No	
	AO							
	AP							
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)								
	AQ	Peter Singer (Editor-in-Chief): "The New Low-k Candidate: It's a Gas"; Technology News, March 1989, 1 page						
	AR	ABSTRACT: Andersson, R.C. et. al., "Porous Polycrystalline Silicon: A New Material For MEMS", Jnl. Of Microelectromechanical Systems (Mar. 1994), Vol. 3, No. 1, pp. 10-18						
	AS	Stanley Wolf, "Silicon Processing for the VLSI Era", Vol. 1, Sunset Beach, CA: Lattice Press, pp. 429-437.						
EXAMINER				DATE CONSIDERED				
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.								

Form PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
M123-1599PRIORITY SERIAL NO.
09/115,339LIST OF ART CITED BY APPLICANT
(Use several sheets if necessary)APPLICANT
Werner Juegling et al.PRIORITY FILING DATE
July 14, 1998PRIORITY GROUP
2813

U.S. PATENT DOCUMENTS

*Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
AA	5,629,238	5/13/97C	doi et al.			
AB	5,670,828	9/23/97C	Beung et al.			
AC	5,691,565	11/25/97	Manning			
AD	5,691,573	11/25/97	Avanzino et al.			
AE	5,773,363	6/30/98D	Frederian et al.			
AF	3,954,523	05/76	Magdo et. al.	148	175	
AG	5,023,200	06/91	Blewer et. al.	437	187	
AH	5,470,801	11/95	Kapoor et. al.	437	238	
AI	5,192,834	03/1993	Yamanishi et al.			
AJ	5,461,003	10/1995	Havemann et al.			
AK	5,744,399	04/1998	Rostoker et al.			

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Subclass	Translation	
						Yes	No
AL							
AM							
AN							
AO							
AP							

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)

AR	Togo, M., "A Gate-side Air-gap Structure (GAS) to Reduce the Parasitic Capacitance in MOSFETs", 1996 Sympos. on VLSI Technology Digest of Technical Papers, IEEE 1996, pp. 38-39.
AS	Anand, M.B., "NURA: A Feasible, Gas-Dielectric Interconnect Process", 1996 Sympos. on VLSI Technology Digest of Technical Papers, IEEE 1996, PP. 82-83.
AT	Watanabe, H., "A Novel Stacked Capacitor with Porous-Si Electrodes for High Density DRAMs", Microelectronics Research Laboratories, NEC Corp., date unknown, pp. 17-18.

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.